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The Adirondack Forests.

THE complete destruction of the Adirondack forests is inevitable if existing conditions and methods of treatment are to continue. Unimportant improvements in the details of their management may be made from time to time; such improvements have been made within the last few years, and others are now proposed; but the processes of destruction are much more rapid and extensive than the effect of these comparatively insignificant means of amelioration, and there is at present no reason to expect that any effective provision will be made for the permanent protection of any part of this important region. Nothing can be done, indeed, without a thorough change in the system of control and administration of the forests on the state lands. The methods now pursued interpose no serious check to the influences which will extirpate the woods in a comparatively short time. If the devastation of the region, already far advanced, is completed, centuries of time will be required for any process of restoration.

The destruction of the North Woods will produce a change in the flow of the principal rivers of the state, and in the water-supply of the Erie Canal, which will cause widespread disaster to the interests of the people. There will be uncontrollable freshets at the times of heaviest rain-fall, and when the snow melts in the spring; the channels of the rivers will be choked by débris brought down from the hills; and in summer, when a full volume of water is most needed, the flow will be insignificant. If this ruin is consummated it will be a most serious blow to the prosperity of the state and of all classes of its people.

Not less important is the value of the region in its relation to the health and life of the people of the country, as a place of resort for the inhabitants of the towns, and for all who need the restorative and vitalizing atmosphere and influences of a region of sylvan beauty and peace. As our population becomes more dense, the need and value of wild, rough tracts, incapable of cultivation, will be greatly increased. Beyond the arrangement required for the subsistence and comfort of the multitudes of visitors, no settlement or inhabitancy should be permitted in any part of the wilderness. If the forests are destroyed the entire charm and attractiveness of the region will be eliminated, and a scene of hideous desolation will be substituted which no one will ever wish to look upon.

The only plan by which such injury can be averted, and means provided for the permanent conservation of these invaluable forests, is the acquisition by the state of the entire Adirondack region. While portions of it remain in the hands of private owners, injuries to state-lands adjacent to their holdings cannot be prevented. But it would be senseless and wicked to expend the money which would be required for this purpose while the present system of control continues. It has proved entirely inadequate for the protection of the forests on the lands which already belong to the state, and it would be the extreme of folly to acquire property at great cost when there is danger that it might soon be dissipated and destroyed.

Unless a system of permanent control under competent direction can be put in operation, the people of New York may as well relinquish all thought of saving the Adirondack forests, and all interest in the subject. There can be no adequate or successful administration of a great forest-preserve while its management is subject to the possibility of frequent change because it is treated as a portion of the political patronage of the state government. Unless the care of the forests on the state-lands can be placed in the hands of men of such known and obvious character and qualification for this work as will inspire general confidence, no system of administration can be successful, and competent men will not accept a place of such responsibility and importance while their work is always liable to interruption by the agencies of partisan politics. The inadequacy and failure of the present system of control and administration are inherent in the system itself, and are inseparable from its relation to partisan change and caprice. The evil is not to be remedied by merely changing the persons who administer a system which is essentially vicious.

If the people of the State of New York have enough regard for their own interests to lead them to insist upon the adoption of a system embodying the essential features of competent direction and security from partisan interference, it will be safe and wise to acquire the whole Adirondack region by purchase. If they have not this perception of the importance of the object in view, and of the means which are necessary for its accomplishment, the forests will be left to their fate. The methods now employed are wholly useless and ineffective.

How Trees Grow Tall.

THERE is no question more often asked of persons who are supposed to have some knowledge of trees than one relating to the manner in which the trunk attains its height. It is difficult to convince people, sometimes, that the trunk itself does not elongate and stretch just as the body of a growing child elongates, and that a mark made in the bark at a given distance from the ground will always remain at exactly that height, no matter how tall the tree may become. A correspondent of the semi-weekly *Tribune*, of this city, raised this question some fifteen years ago, and the answer which Professor Asa Gray wrote is so admirably clear, and such an excellent example of his method of dealing with scientific subjects in a clear and simple way, that we reproduce it for the benefit of our readers, among whom there are some, it is pretty safe to assume, who do not very clearly understand, even if they have ever given the subject any serious consideration, how trees grow tall.

"When I was a boy a thrifty Balm of Gilead Poplar before my father's house, barely large enough for the purpose, was used to hang a gate upon. I remember that the passers-by said: 'That is all very well now, but as the tree grows, the gate will go up.' The gate, as I remember, served for years, and did not 'go up.' When I was a boy, a long row of Lombardy Poplars on the side of the road leading to Hamilton College was used for fence posts, rails being mortised into

their trunks. After I had come to manhood, and had come to be a sort of authority upon such matters, one day, when in the neighborhood, this question was brought up, and the prevalent opinion expressed that the trunks of the trees in such a case must needs separate the rails more widely, and carry them all further from the ground. This opinion was shared by some very intelligent men, who had walked past these trees day after day for many years. I proposed that we should examine the fence, then at least twenty years old. We did so. The lower rail throughout remained next the ground; the upper, apparently, was no higher than the first; the growing wood had formed itself around the ends of the rails, sometimes in remarkable protrusions, forming deep sockets for the rails.

"As for the analogy of the tree with the man, 'born, say, one foot long, and growing till he is six feet high,' but still keeping the same head at the top—that is just what the tree does not do. Let the large bud at the summit of last year's seedling Horse-chestnut tree represent the head, and let Mr. Harrison notice what becomes of it in the spring, when the new growth is made. Or, let him examine a Horse-chestnut tree of five or six years' growth, and notice by the set of rings on the bark, left by the bud scales as they fell, just where the head was each year. He will see that the tree has the advantage of a fresh head each year—a new growth story after story, each on the top of the preceding one; whereas, in the man, the 'one small head' had to 'carry all he knew' year after year. On the other hand, the man is alive all through; the older parts of the tree are dead and buried in the interior.

"The heart-wood of any tree is dead, therefore cannot grow. If the lower part of a trunk has increased in length, say doubled it, in a given number of years, either the central wood must have been torn asunder or stretched, or the outer layers have successively slided over the inner ones. An examination of the structure of the wood as clearly shows that neither of the latter alternatives has occurred, as ordinary observation shows, against the first alternative.

"Can our correspondent bring any one clear case of evidence that a limb has been raised by the subsequent lengthening of a trunk below, excluding all cases such as that formerly referred to in the *Tribune*, where a tree growing on a rock is bodily raised, more or less, by the thickening of the roots spreading over the rock's surface? When such a case is brought to view, then the case will be fairly and specifically before the court of investigation.

"But why do not the limbs always remain near the ground? Answer.—They do until they die off, as the lower overshadowed ones are pretty sure to do. Hemlock and Pine trees show this perfectly, for the knots remain to show where the branches were. When dead and gone at the surface, the succeeding layers of wood, covering all smoothly over, make 'clear stuff,' but it is clear delusion to believe that there have been no branches there; near the centre the knots or their vestiges are still preserved and plain to see on any section which divides the centre. Does our correspondent suppose that those Sugar Pines of the West, with trunks 100 feet high, before a vestige of a limb is seen outside, actually grew to that height without a limb?

"But, then, why does not the new external growth bring the (horizontal) limbs each year closer to the ground? Answer.—It does, by so much as the branch increases in diameter, and also when, long and horizontal, the lower limbs are weighed down. In consequence of this, I have had to lop some White Pine trees which overhang the road, and which, as they increased in weight and leverage, with the increase in length, began to get in the way of teams. In English park trees, where the lower limbs are carefully preserved, it is very common for them to lie on the ground. But at the trunk they will be found to be five or six feet from the ground; when young, of course, they were as high as that throughout, but have declined by their weight as they increased in length."

A German Sketch of American Gardening.

IN Herr Jaeger's "Gardening Art and Gardens," which was reviewed in this journal last week, a number of pages and several illustrations are devoted to landscape-gardening in the United States. The information given is generally correct, and though one would have been glad to see some other picture of an American home replace the "View of Blithewood," which is evidently reproduced from Downing's book, written many years ago, nothing better could have been chosen to illustrate the skill of American artists in dealing with the most fundamental and difficult problems of design than the large scale plans of the Central Park.

During the rule of the Dutch in New York, the author says, a few formal gardens in the characteristic Dutch style were laid out, but the growing supremacy of the English race soon gave landscape-gardening proper the upper hand. Parmentier is honorably mentioned as the first gardener of importance whose name has been preserved, but to Downing is rightly given the credit of being the first noteworthy American artist in this department. His death, however, is curiously placed in the year 1885, instead of in 1852. His book on "Landscape-Gardening" is described as "amply fulfilling its aim as a handbook," and being "especially distinguished above others of its class by its portrayal of the characteristics of various species of trees and their proper employment in gardening art." Nothman and Thomas Lee are likewise mentioned as having worked at the same period; and one is glad to note that this foreign author, unlike many native Americans, recognizes the importance of the piazza in American rural architecture and sees its distinctly local significance. A long list of older parks and country-places is given, taken, of course, from Downing. But all these are as nothing, Herr Jaeger explains, in comparison with the great parks and cemeteries that owe their origin to recent years. To illustrate their character he describes the Central Park, in this city, and Spring Grove Cemetery, in Cincinnati. The choice is a wise one, for this cemetery was the parent of the others of its class, and the Central Park represents the successful treatment of the most difficult problem with which any modern artist has had to deal. After quoting a long description of the appearance of the park that had been printed some years before, he says: "The ridge of land which traverses the whole island of Manhattan becomes in the Central Park a rocky 'comb,' which cuts through the park, but does not divide it, for everywhere tunnels and bridges are placed in such a way as to bind the parts together above and below. The rocks in many places have been made larger and more picturesque by the removal of earth; splits and chasms have been turned into romantic glens; and all this seems as natural as though the hand of man had merely laid out the paths and concourses." Then the following words are quoted from the pen of a well-known German writer, Otto von Corvin, who visited the park not many years after it was laid out: "When I entered the park a prospect presented itself which, in the neighborhood of a large city, and especially of New York, I had not anticipated. Although unfinished and lacking large trees, this park is the most beautiful in the world, as it is the largest [?] and most peculiar. Truly, it does not possess those immense stretches of green, or great, shady avenues we see in the parks of London. Although beautiful meadows do not lack, yet one seems to find one's self in a charming district of the Harz mountains or the Thuringian forest. Everywhere rocks appear, and their naked sides are picturesquely clothed with intelligently-planted creepers." The remainder of this description need not be quoted, however, for it recites details with which almost all our readers must be familiar.

Spring Grove Cemetery Herr Jaeger calls the "most beautiful graveyard in the world." Its creator, as every one knows, was Adolf Strauch, a German by birth. He himself often declared that he had got his idea for a park-like cemetery from the description of Chinese graveyards in Humboldt's "Cosmos;" but Herr Jaeger says there was no need for him to go so far afield since he might have seen in Germany certain cemeteries portions of which, at least, were laid out in a park-like manner. "But in truth," he adds, "they are not even remotely to be compared with such a work of art as Spring Grove." Many other cemeteries and parks are noted with approval but the words used about one or two of them are worth quotation as showing that all does not look fair and laudable in American gardening to intelligent foreign eyes. "In the South Park in Chicago," the author says, "flower-bed artisticalities reach the verge of lunacy, for with bright plants there have been formed figures in relief and portrait-heads, etc., as much as six feet in height. . . . And the park in Boston (by which is meant the Common and the Public Garden taken together), in spite of its size, must be called petty in arrangement, presenting a monstrous mixture of Franco-Italian and English gardening styles, and being tastelessly encumbered with flowers."

In conclusion, Herr Jaeger says that great interest is now universally felt in all the thickly settled districts of our country with regard to private grounds and gardens; and he notes with approval the promising fact that in laying out new towns and enlarging old ones, landscape-gardeners are more and more frequently called upon to give their help. The character of his book being popular and historical rather than technical, he does not lay so much stress upon the ability of our

foremost artists in planning great public parks—the most difficult of all the landscape-gardener's tasks—as does Monsieur André in his more practical hand-book called "*L'Art des Jardins.*" But it is pleasant to see that with all the wealth of material from which he had to choose, dealing with times old and new, American artists and their work were esteemed worthy of so considerable a share of attention and praise.

Conifers Injured by Squirrels.

That squirrels have the habit of biting off the cones of coniferous trees in order to get at the seeds more easily, is well known, but why quantities of the twigs, tips and buds of these trees are sometimes found upon the ground in winter and spring seems not to have been generally understood. Complaints on this subject have often been made by people living near Boston, and attention has been particularly directed to the Norway Spruce. In some cases bushels of tips, from two to four inches long, could be gathered under two or three of these trees. High winds, disease, insects, birds, squirrels and other agencies have been suggested, but proof seemed to be wanting to substantiate any theory. That it did not result from strong winds during cold weather was proved by the fact that the trouble was local, as the ground under some Spruces would be thickly strewn with the tips, while other trees only a few rods away were quite free from evidence of injury. Neither, on careful examination, could any trace of disease, or the work of borers or other insects be found.

The injuries have been noticed in other parts of the country, and in the *Gardeners' Monthly* for 1885 there are several notes concerning it. The editor, p. 166, considers the "matter mysterious," and says that "mice or squirrels cannot do it, as the twigs are not cut by teeth, but broken, as examination by a lens clearly shows."

On page 227 Professor W. A. Buckhout gives several good reasons for supposing it was the work of squirrels, but he had not seen them do it, and, in addition to the Norway Spruce, he mentions similar injuries to *Pinus rigida*. The editor mentions specimens received from New Hampshire which "were broken off at a bud—disarticulated as it were—which a squirrel could not do," and he further thinks "that after the rodent has cut the branch, and drying commences, disarticulation of the side branches results."

At the end of a note (p. 276) from a correspondent at Lexington, Kentucky, who complains of similar injuries to Norway Spruces there, for which he can give no reason, the editor says: "On our grounds (Germantown, Pennsylvania) we have no squirrels, and yet the trees are so thickly strewn with branches—broken at the articulation, not cut by teeth—that the ground surface beneath the trees is covered."

Several years ago I noticed gray squirrels cutting off twigs of Norway Spruce in the winter or early spring, but not until very recently have I had what seems to be positive proof that they do all the mischief. After having carefully watched them at the work I think there is not the least doubt that besides cutting off the twigs at any place, they can also, and naturally do, "disarticulate" the branches at the point where the last season's growth began. In this vicinity a very large proportion of the twigs cut from the Spruces are severed at the "articulation," probably because the squirrels generally find it the most convenient place. As the squirrels reach forward and grasp the little side branchlets to draw them towards themselves, they find the branchlets bend most readily at, or close to, the base of the year's growth, and at the same place a small space is left clear of the sharp-pointed leaves, at once giving an opening and a weak point at which to sever it, which the squirrels do quickly and neatly with their sharp incisors. "Disarticulation of the side branches" would not naturally take place after drying until long after the leaves had fallen and the branches had begun to decay.

The object of the squirrels in cutting off the twigs is to enable them to get at the terminal and lateral buds, the heart of which they dexterously extract and eat while they have a comfortable foot-hold on a strong branch. For the same reasons they cut the nuts from trees and retire to a safe place before eating. Many buds are eaten without cutting off the twigs. Both the red and gray squirrels cut the twigs of Spruces, and I have seen the two species at work on the same trees at the same time.

They seem to prefer the Norway to either the native Black or White Spruces when growing side by side, probably because in the former the branches are more supple, and the leaves less sharp and rigid.

On calm days, when the squirrels are at work, most of the twigs which they cut off and drop may be caught and lodged by their leaves among the branches of the trees, and being blown to the ground during strong winds, their appearance in large quantities after a storm is accounted for. On the flat, sprayed branches, on the upper part of a large tree, I found little heaps of the detached twigs. Although walnuts and hickories were not abundant, there was a good crop of acorns and other tree-seeds the past season, and it its difficult to say why the squirrels eat the spruce-buds, as their doing so does not appear to be from necessity.

If the attack should be made upon the same trees for a number of years it would naturally result in giving the branches a tufted and deformed appearance, if not proving a very serious or fatal injury.

Near the Arnold Arboretum there are some European Larches, the slender, pendulous twigs of which have been bitten off by squirrels in the spring, for several years at least, and the branches are covered with numerous knotty swellings and tufts, which are quite conspicuous, especially in winter.

I have found only one authority who has seen and recorded this habit in our squirrels. Dr. C. Hart Merriam, in his work on "The Vertebrates of the Adirondack Region," in the article on the red squirrel, p. 116, says: He eats the little buds that may be found scattered sparingly along the small branches of the Spruce, and, in order to obtain them easily, bites off the terminal twigs and drags them back where the limb is large enough to allow him to sit comfortably on his haunches while feeding. Under single trees, both in the great forest and on our own lawn, I have found enough twigs to fill a bushel basket. The injury thus done is sometimes very extensive."

In European journals there are frequent notices of injuries to Conifers caused by squirrels; but, in some instances at least, the attacks are of a different and more serious kind. A writer in the *Journal of Forestry* (London) for January, 1881, p. 578, says of them: "After a severe winter, during which a scarcity of seeds has been experienced, these animals betake themselves to the young woods, and do great damage by nipping buds from the extremities of the branches, thus causing the trees to become bushy and straggling in the top; they also in the early spring and summer months denude many Pine trees of their bark, commencing their attacks at two to five feet from the top, sometimes peeling all around and sometimes in patches; in the former case, the heavy winds will cause the trees to break; but, as regards the latter, the injury, if not severe, will in time heal over, although usually producing what is subsequently known as a flaw in timber. . . . In like manner squirrels attack deciduous trees, such as the Beech and Plane, thus frequently causing the tops to die. . . . In woods where there is a good mixture of Spruce Fir, their depredations will be found to be of the most serious nature."

By far the most serious charge that I have seen against the squirrels, in connection with their injuries to Conifers, occurs in the *Bulletin de la Société d'Acclimatation de France*, April, 1881, p. 253, where M. Ed. Rénard gives an account of the ravages caused by squirrels on the Pines in the forest of Rambouillet. Here the writer relates that previous to the year 1874 there were no squirrels known in the forest of Rambouillet; but about this time they were introduced, having escaped from a neighboring château.

At first their presence in the woods gave pleasure; then he says: "But one day, after a strong gust of wind, I saw on the ground, to my astonishment, a considerable quantity of the leaders (*flèches*) of Pines from two to three metres in height. I did not know to what to attribute this devastation, which I soon knew must be the work of the squirrels; they had gnawed entirely around the bark of the Conifers, and the dead tops of my trees were thrown down and strewed on the ground."

The destruction of the squirrels was ordered, and over 200 were killed in the year, and the injuries decreased. Later, however, a new invasion of squirrels from another forest destroyed some thousands of trees of *Pinus sylvestris*, by completely girdling the stems several metres from the ground, causing the trees to have a spreading form, and destroying their value for timber.

Acorns having been scarce the preceding year, he thinks that the squirrels, in the absence of other winter food, were obliged to eat the bark.

The trouble had increased to such an extent from year to year, the squirrels attacking fruit-trees as well as Conifers, that the forest administrators had established a reward of half a franc each for all squirrels killed.

I do not know that the squirrels have been found to peel the bark of Pines in this country, but it is not improbable that they would do so in times of scarcity of other food.

In the spring they sometimes bite through the bark of

Maples to drink the sweet sap which flows so freely at that time, and, after growth begins, they eat great quantities of the buds of some deciduous trees, especially of Maples, but without seeming to affect the trees very seriously, probably because there are plenty of the small accessory buds remaining to replace those destroyed and repair any injury done.

Arnold Arboretum. *J. G. Jack.*

Agaves.

PERSONS familiar only with Agaves, or, as they are popularly, although improperly, called, Aloes and "Century Plants," grown in pots, can have a very slight idea of their massive strength and beauty when planted out permanently in a region whose climatic conditions are favorable to their full and perfect development. Our illustration upon page 115, from a photograph taken in an Algerian garden, shows how these plants look under such conditions. For producing certain effects in gardening, especially where plants are needed in immediate connection with buildings or other structures, in moderately warm or dry countries, like those which surround the Mediterranean, where, although natives of the Mexican plateau, some species of Agave are now perfectly naturalized, or like southern California, where some of the small species grow spontaneously, the Agave is immensely valuable. Even in countries where it is necessary to protect them from the cold in winter, and therefore to grow them in pots or tubs, these plants are better suited to decorate dry and sunny terraces, or the entrances to large buildings, than any others, as they can support heat and dust and continue to grow and improve for many years, or until the development of the flower-stem ends their existence; for these plants flower only once, and as this does not occur until they are fully grown, they early acquired the name of "Century Plants," because, confined in pots, the plants first introduced into Europe grew so slowly that they did not flower for many years. It is now known, however, that in a state of nature the largest species reach maturity at the end of fifteen or twenty years, or, perhaps, even in a shorter time; and their tall, branching flower-stems, often more than thirty feet high, are familiar and exciting objects to all travelers in northern Mexico.

New or Little Known Plants.

Fendlera rupicola.

FENDLERA RUPICOLA,* of which a figure appears on page 113, is a low shrub peculiar to the dry south-western portions of the United States, being found growing in the crevices of cliffs or among rocks from the valley of the Guadaloupe, in western Texas, to the western borders of New Mexico and south-western Colorado. Although scarcely known in gardens yet, it promises to become so, as it possesses many qualities which will make it a most desirable addition to the number of small shrubs suitable for cultivation in the rock-garden or along the margins of small shrubberies.

Fendlera attains a height of from two to four feet. The branches are upright or somewhat pendulous, slightly angled or grooved, pale gray, and covered with small, entire, opposite leaves, which are revolute on the margins, prominently three-ribbed, and densely covered on the lower surface with pale tomentum. The bluish white flowers, with their conspicuous yellow stamens, are very showy, and are produced in the greatest profusion from the extremities of short lateral branches, which spring from the main stems of the plant.

Fendlera has been cultivated in the Arnold Arboretum for several years; it is perfectly hardy, flowering the middle of June and ripening its seed in September. It is growing in ordinary, good garden soil, and requires no special care or cultivation.

The genus Fendlera, of which but a single species is known, commemorates the services to botany of the late Augustus Fendler, a German naturalist, long a resident of the United States, and, after Wislizenus, the first botanist who visited New Mexico, where he made large and important collections of plants. It belongs to the Saxifrage family and to the tribe of the Hydrangeas, which consists of sixteen genera of woody plants all natives of eastern Asia, the Pacific islands and North America. Among them are Hydrangea, Deutzia and Philadelphus, and several North American genera, which, like Fendlera, are monotypical, Jamesia of Colorado and Carpenteria of California being its closest allies. *C. S. S.*

*Fendlera rupicola, Engelm. and Gray; Gray, *Pl. Wright.*, i. 77, *t.* 5; *Pl. Thurber.* 300.—Baillon, *Hist. Pl.*, iii. 349.

Foreign Correspondence.

London Letter.

PROFESSOR MacOWAN, director of the Botanic Gardens at Cape Town, has recently discovered wild plants of a very distinct and remarkable Scrophulariad, which is likely to prove a useful garden plant. It was first found by Ecklon in Tulbagh, about 100 miles to the north-west of Cape Town, and was described by Bentham in 1836 under the name of *Ixianthes retzioides*. Dr. Harvey figured it soon after in his "*Thesaurus Capensis*," and recommended it to the notice of English horticulturists. Till now, however, its introduction has not been possible, owing to the extreme scarcity of the plant in a wild state. Professor MacOwan, who has sent seeds of it to Kew, writes: "I beat over nearly every square yard of the mountain side wherever there was oozing water every time I went to Tulbagh, and last October dropped on to five large plants, almost trees for size, most splendidly in flower. The long floriferous branchlets were just one mass of sulphur-yellow bells, as close as they could well stick. I have since secured seeds, a portion of which I send to Kew; the rest goes to Vilmorin, Andrieux & Co., Paris." The plant is of shrubby habit, five feet high, with densely crowded leaves two and one-half inches long, one-quarter inch wide, toothed, dark green. The flowers are bell-shaped, one-half inch deep, with five spreading segments measuring one inch across and of a bright yellow color; they are produced in pairs or threes on short peduncles from the axils of the leaves. The plant grows in wet places. Many of the Cape Scrophulariads are remarkable for the beauty of their flowers, but, owing to their being semi-parasitic on the roots of other plants, they cannot be cultivated. Such plants are Cycnium, Buttonia, Gerardia, Harveya and Melasma, of which we have obtained seeds again and again for trial at Kew. At present we have young plants of Cycnium, Buttonia and Malasma; but they grow very slowly. We have also lately sown seeds of Harveya on soil containing a plant of *Barosma fœtidissima*, which is said to be the host plant of this species.

The Cape flora is exceptionally rich in plants of great beauty and interest both for gardener and botanist. No country in the world has contributed so largely to English plant-houses, and although many of the plants which were cultivated here with so much delight fifty years ago are out of fashion now, they are certain to come into favor again. From 1775 to 1835 Cape plants were quite the rage; English gardens were filled with Ericas, Pelargoniums (the species), Proteas, and such like beautiful shrubs, while the Iris, Amaryllis and Lily families were represented in thousands. The survivors of this reign of the Cape flora are principally such bulbous plants as Nerine, Vallota, Clivia, Ixia, Lachenalia and Gladiolus. Freesia was lost entirely till about five years ago, when Professor Foster drew attention to it, whilst even Lachenalias and Nerines have come into notice again only within the last ten years. The Ericas have almost gone, if we except a very few of the soft-wooded kinds. No one grows Porteas except, perhaps, at Kew. Nor are the delightful species of Pelargonium, Oxalis, Watsonia, many Gladioli, Cyrtanthus and Crinum known in gardens, save in a very few. Mr. Endicott, of your country, is, I perceive, doing good work in growing and calling attention to some of these lost plants. In like manner a few specialists in England are striving to popularize many of the best of the least known Cape plants. Nor have all the good plants of the Cape been introduced yet. Witness the discovery of the glorious Poppy-flowered Sun-dew by Miss North when she went on a sketching visit to the Cape in 1885. This plant has flowers as large and bright-colored as those of the field Poppy. It is satisfactory to be able to add that there are living examples of it at Kew. There are many grand garden-plants at the Cape of which we know practically nothing.

In England, with our dull, wet, foggy winters, the cultivation of the more delicate Cape plants is surrounded by great difficulties. In America you have only the cold to overcome; light you have in abundance all through the winter. I imagine that Cape plants, if taken well in hand, would prove a far greater success with you than in England.

Among the newer stove plants the most attractive now are the following: *Ardisia mamillata*, introduced by Kew from Hong Kong three years ago, and now a favorite stove plant here. It is less than a foot in height, similar in habit to *A. crenulata*, but the leaves are softer, densely papillose, covered with silky hairs, and dark green. The berries are borne on the branches exactly as in *A. crenulata*, but they are of a bright scarlet color. Plants are easily obtained from seeds, and grow to pretty little specimens in about a year.

Begonia semperflorens hybrids:—Monsieur Lemoine has raised and distributed some very useful new winter-flowering Begonias, obtained by crossing *B. semperflorens* and *B. Lynchiana* (*Roezlii*). They grow quickly into bushy plants two feet high, with medium-sized leaves of the glossiest green, and large bunches of red, crimson or pink flowers. These are developed in January, and last in beauty for about two months. They are great improvements upon both parents, a statement which does not always apply to hybrids. The evergreen Begonias are at last getting the attention which has been so long refused them, and we have already some distinct and beautiful kinds, thanks to Monsieur Lemoine, the Messrs. Veitch and a few others. Even such old hybrids as *B. Knowsleyana*, *B. Wiltoniensis* and *B. Lindleyana* are of considerable value as autumn and winter-flowering plants.

Aphelandra chrysops, a stout-stemmed species with large, silver-banded leaves and handsome terminal spikes of canary-yellow flowers; *A. aurantiaca*, smaller in stature than the above, but of sturdy habit with shining gray-green leaves and large spikes of scarlet and yellow flowers; *Eranthemum albiflorum*, with orbicular leaves and branched spikes of pure white flowers; *E. cinnabarina*, a tall, single-stemmed species, characterized by large, oblong leaves and long, arching, branched racemes of purplish-crimson flowers; these are all in flower now and will remain in beauty for some weeks yet. Tropical Acanthads are deserving of a great deal more attention than they get. Most plant-stoves are dull and almost flowerless at this time of year, although there are hosts of such plants as those here mentioned, which are bright and attractive with flowers all through the winter. They are easily grown, requiring only ordinary attention at all times. Aphelandras are best when grown from seeds, which they usually ripen freely under cultivation.

In the conservatory the Himalayan Rhododendrons have begun to unfold their magnificent flower heads. Large specimens of *R. arboreum*, with the richest crimson blossoms, and of *R. Nilagericum* equally handsome, but pale pink in color are the first to brighten the house; and they will be shortly followed by such splendid species as *R. argenteum*, *R. Nuttallii*, *R. Aucklandiæ*, *R. Edgeworthii* and many others. I can imagine a large, lightly-built, low-roofed conservatory, without any staging, but filled with beds of peat soil and planted with these Rhododendrons, Tree Ferns, Liliums—such as *L. auratum* and *L. giganteum*. Such a house would require very little fire-heat and much less attention than when the plants are in pots. The charm of it would be largely due to the absence of pots and stages, of which we are a great deal too fond where green-houses are concerned. The popularity of the great winter-garden at Kew is owing to the absence of pots except on the shelves round the sides; and that the plants prefer beds to pots is proved by the magnificent health of such things as Acacias, Polygalas, Bossiæas, Palms, Tree Ferns and Rhododendrons. No one can form any idea of the beauty of the Habrothamnus until he has seen them as at Kew. The enormous bushes, twelve feet high, crowded with long, arching branches which are literally weighed down by the large clusters of flowers they bear, make pot specimens of the same plants look ridiculous. They have been full of flowers since the beginning of December. *Senecio Ghiesbreghtii* is still aglow with its massive heads of yellow bloom. *Staphylea colchica* is attractive with its many racemes of white flowers, pure and graceful, and suggesting orange blossoms. This plant is grown in thousands by the London market-gardeners. A pretty plant, uncommon in color and of lasting qualities, is the Blue Marguerite, *Agathæa cœlestis*. It forms a compact, globose bush a foot high, with dark-green, spathulate leaves and long-stalked Marguerite-like flowers one inch across, the ray-florets pale violet, the disc pale yellow. It is scarcely ever out of flower, and is useful for cutting.

Fig. 98.—Fendlera rupicola.—See page 112.

ORCHIDS.—The best of these in flower now are *Paphinia grandis*, much the handsomest of the genus, its large flowers of the richest dark chestnut-brown, with streaks of white. The plant is small, often smaller than one of its flowers. Unfortunately, it does not appear to be easy to establish, as plants rarely flower after they have been in cultivation two years. *Calanthe vestita gigantea* has no equal among the Vestita section of the genus. It is truly gigantic in all its parts. It also blooms much later than the other kinds, and retains its large leaves healthy and green even till after the flowers are over. The spikes are nearly a yard long, arching, and the flowers are over two inches across, white with a red eye. *Oncidium splendidum* is a king among the Oncidiums. It is evidently a

good grower, very distinct in foliage, and the spikes are erect, over a yard high, branching and bearing large flowers, the lip of which is canary-yellow, large, the sepals and petals barred with red-brown. The individual flowers of *O. splendidum* are not unlike those of *O. tigrinum*, a resemblance which led to its being called a variety of this species; in pseudo-bulb, foliage and habit the two are widely different. *Cypripedium Curtissii* is a beautiful species, related to *C. superbiens*, and one of the most distinct of all the recently-introduced kinds. Messrs. Sander & Co. have a large batch of it, a few plants of which are in flower.

Kew, February, 1889. *W. Watson.*

Cultural Department.

Sparaxis and Ixia.

ACCORDING to Mr. Baker, of Kew, there are in south Africa about 800 species of plants of the Iris, Lily and Amaryllis families, whose underground portion is either a corm, a tuber or a bulb.

If we add to this number the bulbous and tuberous Oxalis, Pelargoniums, Othonnas, Crassulas, etc., we shall have a total of about 1,000 species, included under the popular name of "Cape Bulbs." Of these probably not one in twenty is cultivated either in this country or in England, though many showy hybrids of a few Ixias and Sparaxis are yearly offered for sale both there and here.

In horticulture as in other things, "the old order changeth, giving place to new." Cape Bulbs have enjoyed a period of popularity in the past, as the numerous plates of these beautiful flowers in the *Botanical Register*, the earlier volumes of the *Botanical Magazine* and other works will show. As a whole they have very much to recommend them. Nearly every one is of great horticultural interest for the grace, brilliancy or fragrance of its flowers. Hardly one is difficult to manage. Some are perfectly hardy; most of the others can be safely carried through a New England winter in a frame or in a raised bed, with a covering of leaves, and those which must blossom in the winter or not at all will do well in a sunny window.

The Ixia and Sparaxis, the former for the gracefulness of its tall spikes, and the latter for the extreme brilliancy of many of its forms, may claim a place in the very front rank of Cape Bulbs.

Sparaxis is a small genus, consisting of only three species, though there are several varieties of these found in a state of nature and a great many produced by the labors of gardeners. *S. bulbifera* has flowers of some shade of yellow, ranging from the lightest and faintest to very strong and bright ones, but always yellow. It is named from the elongated bulbs which it forms in the axils of its leaves, although the other species do the same with equal prolificacy. *S. grandiflora* is distinguished by its white and purple flowers. These two colors are always present, as far as I have observed. In some of its forms the purple is confined to the edges of the floral divisions; in others the whole flower is of a deep velvety purple except a white tip, or perhaps a light edge on the six segments. The third species, *S. tricolor*, is not outdone in brightness, in some of its forms, by any flower the whole earth can show. Its three colors are jet black, yellow of varying shades, and red of some very bright tint; scarlet or crimson, or some other as showy. These three colors in the best varieties form a whole more dazzling than any one not familiar with the flower could imagine.

I believe that the very numerous sorts offered by Dutch bulb-growers are varieties of these species, and not hybrids, for, though I have grown a very large number of them, I have never seen one in which the characteristic colors of two species met in the same flower. The stalk of the Sparaxis is from eight to ten inches high, and bears from four to seven flowers, each of which lasts several days. Its leaves are flat, long and somewhat blunt at the end, and grow more upright than those of the Tritoma, less so than those of the Ixia. The bulb is unusually white and clean in appearance, and is almost spherical. The plants sold as *Sparaxis pulcherrima* and *S. pendula* are not now included in the genus, but form the genus Dierama. I can say but little of them, and will say that little here. They are exceedingly beautiful, bearing long racemes of somewhat bell-shaped flowers of a lovely rosy hue, on gracefully bending, slender stalks four feet high. At least so we are told, and we must take it on trust.

I cannot make them flower, though I have had them for years under all kinds of treatment. The most skillful cultivator of bulbs in this part of the state has been equally unsuccessful. The plants appear to be like *Iris Robinsoniana*—most beautiful things, whose beauty no one can cause to be developed. With covering *D. pulcherrima* will endure our winters; under glass it is evergreen.

The Ixias are very different from the Sparaxis in general appearance, their leaves being much longer, narrower and darker green, and usually somewhat twisted. During our shortest days, when the sun is only a few hours above the horizon and his elevation at noon is only about twenty-five degrees, the Ixias suffer more from deprivation of light than any other Cape Bulbs, except a few species of Gladiolus. For this reason better results will be obtained, I think, by planting these in February or March than by doing so in September or October. The flower-stalks of Ixias are slender and quite rigid and straight, and the flowers are clustered thickly at the top. The many kinds offered in Dutch catalogues appear to be hybrids, as they show peculiarities of two or more species in the same flower. These hybrids are, many of them, of exceeding beauty, and many are highly fragrant, having the delicious perfume of the Neapolitan Cyclamen.

The species, as far as I have cultivated them, are these:

1. *Ixia polystachya;* white-flowered, about twenty inches high, the stalk having from three to six lateral shoots, coming into flower at the same time as the central one.
2. *Ixia flexuosa;* twelve inches high, flower sometimes white, sometimes pink.
3. *Ixia hybrida* (*I. flexuosa* of Ker); white, with rose centre; highly fragrant.
4. *Ixia aristata;* white, pink or rose, according to variety, and frequently sold under fanciful names, as some others are.
5. *Ixia fragrans;* pink, if I have it true to name.
6. *Ixia patens;* generally deep crimson, a species sold by dealers under its true name and usually in its typical state.
7. *Ixia speciosa* (the *I. crateroides* of the catalogues); deep crimson, with lighter exterior.
8. *Ixia maculata* of Linnæus (*I. conica* of Salisbury, and sold under both names); one of the most variable of plants; many varieties having centres of two colors, chestnut and blue, pink and blue, blue and crimson, etc., while the ground color is white, cream, lemon, buff, orange or light blue.
9. *Ixia columellaris;* also variable, but of soberer colors than *I. maculata.*
10. *Ixia monadelpha*, frequently sold as *I. columellaris;* pink, with crimson eye; yellow, with chestnut eye; purple, with blue eye, etc.
11. *Ixia paniculata;* a species I do not think worth growing; it has a very long-tubed flower of a brown paper color.
12. *Ixia viridiflora;* the most beautiful of all, having lovely sea-green flowers, with a purple centre.

There are six or seven others which I have never seen.

Canton, Mass. *W. E. Endicott.*

Cultivating Wild Flowers.—With all the encouragement to skill offered by the system of premiums at our horticultural shows, specimens of extra good culture are seldom seen, except, perhaps, in the case of the Chrysanthemums. In the Old World visitors are sometimes surprised to see on exhibition some wild flower, taken in hand by a florist, who makes a wonderful specimen by care and good treatment. At a recent exhibition in Germany, one of the wild Orchids of that region was thus shown, and, according to the *Gartenflora*, a specimen was produced that far exceeded in beauty the rare Orchids of foreign lands, for which hundreds of dollars are sometimes given.

Improvement of the Pansy.—When, in the boyhood of the writer, some fifty years ago, the Pansy came to be some three-quarters of an inch in width, and the florists gave the varieties distinctive names, it was regarded as a wonderful achievement of modern skill. But an old work on horticulture in Britain, called "*Hortus Floridus*," has recently been brought to light, issued two hundred years ago, in which are pictures of Pansies just as large and fine. The query is, had the florists of these early times agents in their employ with exaggerated picture-books, or were the Pansies of those days as large and fine as those of our own time?

Maule's Quince.—*Pyrus Maulei* has flowered with us for several seasons past. English papers compare it with *Pyrus Japonica*, which the flower does to some extent resemble in form, though bright orange in color, and not red as in *Pyrus Japonica*. The flower also opens early, as it does in that species. But the foliage and habit are more like those of the Pyracantha (*Cratægus Pyracantha*) than those of the ordinary Japan Quinces. Like the Pyracantha, also, it has a disposition to be evergreen. It promises to be an excellent addition to our list of hardy shrubs. *Thomas Meehan.*

Germantown, Pa.

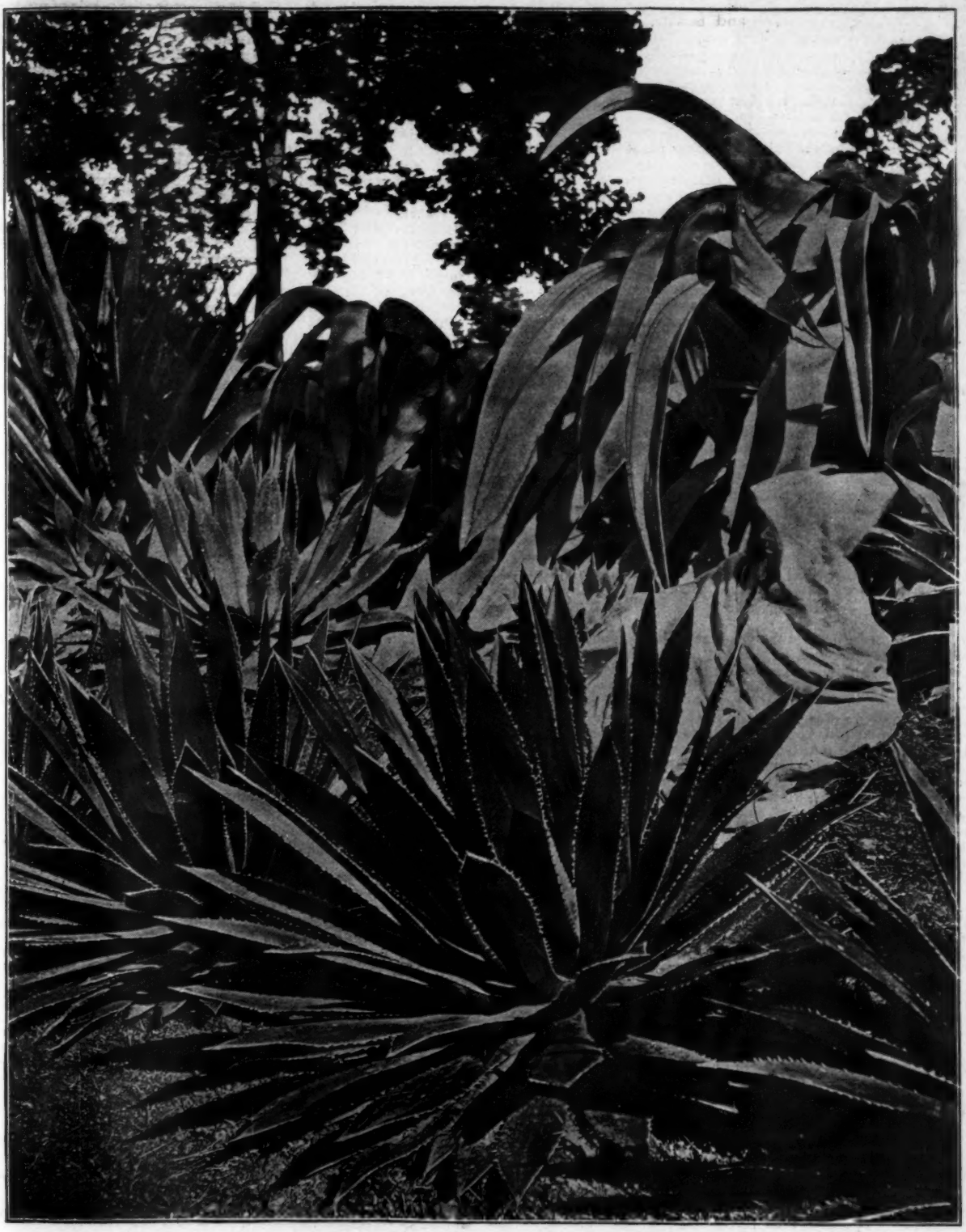

Fig. 99.—Group of Agaves in an Algerian Garden.—See page 112.

Clematis paniculata.—The question is often asked, "What is a good white Clematis to plant as a companion to *C. Jackmanni?*" To this may be replied *C. paniculata*. This Japanese species is of vigorous habit, floriferous, hardy, and, above all, long-lived. Young plants with us last summer grew ten feet high and flowered from the ground to the ends of the shoots. In general appearance, *C. paniculata* somewhat resembles *C. flammula*, but the foliage is large and leathery, and the

flowers are produced in panicles often two feet in length, of a pleasing ivory-white color. They may be seen at their best about the second week in September, at which time the foliage is hidden by the flowers, which are followed by awned seeds with a reddish tint, and last until severe frost sets in. Although introduced in 1796, *C. paniculata* is by no means common in this country, owing to the difficulty of obtaining good seed, it being usually killed by frost before it is sufficiently matured to germinate.

Shortia galacifolia.—This interesting plant has proved perfectly hardy in New Jersey. When it has the protection of a cool house in winter it thrives better, however. The flowers are produced earlier, and last several weeks in good condition. Established plants flower freely. We have one in a four-inch pot with twenty-four buds, some of which are already expanded. Those who wish to cultivate this plant should, if possible, get established plants; collected ones are uncertain. *Shortia galacifolia* succeeds well in a soil composed of two parts peat and one of loam. It requires plenty of moisture at all times. We have also found that a half shady spot, such as a cool frame, is best suited to the plant in summer, as the sunlight is apt to scorch the young foliage.

Strong Vitality of Crocus Flowers.—In the latter part of November about fifty bulbs of a species of Crocus, probably *C. sativus* or *C. speciosus*, were received from a correspondent in Turkey. They came by mail, packed in dry cotton wool, and were, to all appearances, lifeless, but evidently belonging to the autumn-flowering section of the genus, as there were dried flowers of a purplish color attached to the bulbs. However, it was decided to plant them, and, shortly after this was done, signs of growth were visible in the production of leaves and the thickening of the leaf-sheath of the membrane. This thickening was thought to indicate the appearance of more blooms, when we were surprised to find that seed-pods and perfect seeds were formed, and this after the bulbs had traveled thousands of miles between the time of flowering and subsequent continuation of growth.

Passaic, N. J. *E. O. Orpet.*

Sowing Acorns.—It is the popular belief that acorns and nuts must either be sown in the fall or kept in earth for spring sowing; but practice has shown that this is not essential. Indeed, walnuts very often fail entirely when sown in the fall. There is no objection to the preservation of such seeds in earth for sowing in spring, but anyone who has not done this may safely sow in April, if the seeds have not been allowed to become dry. A damp cellar, such as many nurserymen use for heeling in plants in winter will suit admirably. If the acorns and nuts have lost nothing in weight by drying since they were collected, they may be sown with assurance of success. *Joseph Meehan.*

Germantown, Pa.

Principles of Physiological Botany, as Applied to Horticulture and Forestry.

X.—A Few of the Nitrogenous Compounds formed within the Plant.

IN the previous papers of this series we have followed the course of inorganic materials into the plant, and we have investigated some of the products resulting from the chemical processes which go on in the assimilating and the elaborating cells. Thus far our attention has been confined to the cell-wall substance, the starches, the sugars, the acids, the fats, and the like, all of these being products which are devoid of nitrogen. The way is now open for a brief consideration of certain groups of substances, of which nitrogen is an essential constituent.

The element nitrogen enters the plant in some combination, as we have already seen, and its destination is the formation of what are known as albuminoidal matters, or proteids. The living matter in plants and animals alike, consists essentially of various proportions of these albuminoidal substances, in which, for the time, certain special activities are manifested.

When the living matter, with its associated albuminoidal substances, is subject to proximate analysis (that is, an analysis which stops just short of resolving it into its ultimate constituents), it is easy to discriminate between closely allied compounds which are almost the exact equivalents of the albuminoids found in the animal kingdom. In fact, they are commonly called vegetable albumin, vegetable casein, and vegetable fibrin, to distinguish them from their allies in the animal kingdom. This nomenclature, although correct in its main features, is not sufficiently exact for the needs of modern science, and hence other terms, more precise and significant, have been bestowed upon most of them. For our purpose, however, it is sufficient to regard them as a whole, and to keep in mind the important facts regarding their bearing upon the work in the plant. First of all, then, it must be observed that the chemical changes which take place in the living matter of the plant, by which nitrogenous compounds are formed, are akin to what has been called dissociation. In a general way it may be said that the protoplasm itself contributes of its own substance to form these other products, but the processes of repair in a healthy cell keep pace with the destructive changes.

By what is recognized as an oxidizing process, or a sort of "fermentative" process (to use the term of one of the most recent and careful investigators of this subject), substances known as amides are formed from the albuminoids of the plant, and these may give rise to very complex combinations, some of which are immediately broken down, while others are maintained as distinct compounds in certain cells. A few of these compounds are occasionally broken down until their products appear as compound ammonias of a volatile character. Such are sometimes found in a few plants at the time of flowering.

In the form of these compound ammonias a little of the combined nitrogen of the plant may escape as a sort of excretion, but, aside from this, which is very special and limited, there is no true excretory process answering in the slightest degree to the elimination of urea in animals. From what we know of the very close similarity between animals and plants in their physiological relations, it is highly probable that some excretory process may yet be made out clearly. The behavior of a peculiar substance known as asparagin has led some investigators to look in this direction for a solution of the problem, but as yet there has been no conclusive evidence that this product plays such a part, or even assists, in such a way in the vegetable economy.

Among the more complex nitrogen compounds of the plant few possess greater interest from the point of view of useful applications than the so-called alkaloids. For the most part these occur in small amount, and, as a rule, are characteristic of certain plants. Thus alkaloids, of which we may take Quinina as the type, are characteristic of the Cinchonas; Morphina and its allies are found in the Poppies; Atropina occurs in Belladonna. In the plants closely allied to these there may be kindred but not identical alkaloids, so that it is at present impossible to assert beforehand, from the affinities of a plant, whether or not it possesses alkaloids of a certain character. In fact there are many indications that closely related alkaloids may occur in plants which belong to widely separated orders, a good example of this being afforded by the active alkaloid of Coffee, Tea and the like.

A practical point of some importance is to be here noted—namely, that, by judicious selection, the amount of an alkaloid characteristic of a given plant may be measurably increased. This is a consideration of much greater significance to cultivators in tropical and the warmer parts of subtropical countries than to residents of temperate climates, since, under those skies, the amount of the alkaloids is generally larger than in cooler regions.

A curious fact of no practical importance may be mentioned at this point—namely, that it is possible for one to kill an alkaloid-producing plant by the very alkaloid which it yields. For instance, by watering the soil with a solution of morphina, it is possible to destroy the Poppy.

Another interesting group of nitrogenous bodies found in plants comprises the unorganized ferments. These bodies have the extraordinary faculty of causing changes in other substances, without always, if indeed at all, undergoing change themselves. Thus an unorganized ferment, known as diastase, has the power of converting starch into soluble substances very readily utilized by the living matter of the plant. There are other ferments which are inert as regards starch, but act efficiently upon nitrogenous substances. The best cases of this class are met with in the so-called insectivorous plants and in the fruits of the Papaw, a tropical plant. In these and a few other plants active principles akin to the digestive ferments of the animal world are found in surprising amount. That which is characteristic of the insectivorous plants is related to if not identical with the ferment known as pepsin, while the Papaw fruit yields one more closely resembling those which can act in an alkaline fluid. There is good reason for the belief that these plants are not anomalous, except in the relatively large amount of the ferment which they

duce; on the whole, it is not unlikely that some similar substances are always active in the seeds of certain plants at a certain period of their germination. The fact that these ferments have an important office in the life of certain plants, and that others are found in almost all plants, leads to the question as to the possible use to vegetation of the alkaloids and other powerful nitrogenous principles which are found so widely diffused, and which appear to have no office in digestion or nutrition. It is usually said that these have the office of protecting the plant from invasion from unwelcome insects and other animals, and this is doubtless true, but it is not improbable that some of them may share with certain resins the power of resisting the attacks of more insidious enemies—namely, destructive fungi.

We have now passed in very brief review some of the more important substances which the plant forms in its laboratory. Looking at them all from the point we have now gained, we may say that they fall naturally into the following classes: (1) Those which are, or are allied to, the primary product of assimilative or constructive energy, depending on the reception of solar radiance; to this class belong the members of the sugar series; (2) Derivatives of the former class representing nearly or quite the same amount of stored energy, such as the cell-wall substance; (3) proteids, having nitrogen as an essential constituent, and forming the source of the living matter of the plant; (4) waste substances, both of the nitrogenous and the non-nitrogenous series, which are turned to account by the plant in protection, attraction, and so on.

The green cells of the plant, exposed to the light and air, are the seat of those activities which result in the construction of organic matter. Any other cells of the plant, provided the temperature is sufficient, may serve as the seat of any or all the many activities by which these primary organic products are converted into other matters. In short, to use a familiar expression, the energy of solar radiance winds up this marvellous machinery, which in its rapid or its more tardy running down, gives us all the phenomena of plant life. But it is to be remembered that, so long as the sun shines on an active plant which is properly supplied with the raw materials for its work, the machinery is being constantly wound up, and, as one may say, faster than in the economy of the plant, the supply of energy can ever be used. This excess is left for the use of other organisms, or it may accumulate, as in fact it has accumulated, in the stores of unused carbon of our living forests, and the forests of the past, our coal of to-day.

Cambridge, Mass. *George Lincoln Goodale.*

The Forest.

The Forests and Woodlands of New Jersey.—IV.

THE largest Holly trees I have ever seen are at Wildwood, on Five-mile Beach, which lies along the Atlantic shore above Cape May. Many of them are more than a foot in diameter, with lofty and spreading tops, and in winter when these towering masses of dense evergreen foliage are decorated with an almost unimaginable profusion of bright scarlet berries, the effect is indescribably beautiful; and when, as sometimes happens here, the trees are wrapped for a few hours in a fleecy, feathery mantle of snow, the forest looks like a picture—a scene from an enchanted land. There is a fine, umbrageous forest here, almost immediately on the beach. It is nearer the ocean, indeed, than any other forest of equal beauty along our coast, so far as I have observed. Besides the Hollies, many of the Oak, Cedar, Sassafras and other trees are also very large. It is pleasant to note that the proprietors of the place have an appreciation of the charm and glory of fine forest trees, and that they intend to preserve many of them permanently. At Holly Beach there are also very fine trees.

In many of the towns of our country noble trees are often sacrificed to the notion, held by the street officers, that wide, wind-swept expanses of dust, bordered by straight walks from which all trees have been removed, are an indication of superior "enterprise" on the part of the inhabitants, and of energetic administration of the supervisor of roads. I have seen trees thus destroyed which had been the source of much greater good to the community about them than had ever been wrought by the man who murdered them. A curious feature or accompaniment of this vandalism, which may be observed almost everywhere, is the mockery of tree-planting along the same streets from which trees of great beauty and of historic interest, the product of centuries of growth, have been ruthlessly cut away. When the thoroughfares and roadsides of the town have been completely devastated, the officers proceed to set out young trees along the streets. But the planting is usually performed in such fashion as to kill or permanently cripple most of them, and for a generation or two the inhabitants will see a miserable array of dwarfed and stunted bushes and spindling saplings where once stood the great trees which were the pride and glory of the village.

The Great Oak of Salem.—There is a remarkable White Oak at Salem. It stands in the burying-ground of the Society of Friends. I cannot learn that any one knows its age exactly, but it is said to be at least two hundred years old. It is a wonderful tree for its size and symmetry, and for the great number and spread of its branches. It was measured in 1884, and was then eighty feet high; the trunk was eighteen feet four inches in girth, and the spread of the branches was 360 feet in circumference. The circle covered by them was 114 feet in diameter and its area 10,207 square feet. I am indebted to the courtesy of Mr. H. M. Rumsey for these measurements.

To see this tree is well worth a summer day's journey from Philadelphia to Salem. Any such tree is a credit to the town in which it stands. Its existence indicates a degree of civilization, an appreciation of the beauty and majesty of noble trees, which is by no means so general in our country as is desirable. In too many places such insensibility and vandalism prevail that no tree ever has a chance to attain to imposing proportions, the beauty of complete development, or the interest which attaches to great age. I am sorry to say that this fine tree has been seriously injured within the last few years by neglect of the wounds made by the removal of several large branches. The large cut surfaces are exposed to the weather and to the attacks of enemies of all kinds, without any protection whatever. They should have been covered at once with a thick coat of coal-tar or paint. While unshielded they invite the entrance of the spores of various fungi, or toad-stools, which will ultimately destroy the tree. Their mycelium is a perennial growth, and spreads through the sound wood until the entire tree is inoculated with a fatal disease. It is probable that in a few years this grand tree will begin to show symptoms of decay.

Large Trees in Cape May County.—There are some very large Oaks and other trees still standing in swamps, or on ground surrounded by swamps, in Cape May County—trees which were doubtless there when white men first visited the country; but there are, I believe, no considerable tracts of unbroken primeval forest in that region. Mr. Richard S. Leaming and Dr. Coleman F. Leaming told me of a White Oak which was nine feet across the stump, and forty feet to the first limb, and this limb was over two feet in diameter. At this height the tree was more than four feet through, and all below this was sound. A Methodist clergyman counted over 800 rings of growth. The same gentleman told me of a Tulip-tree ten feet in diameter, with a clear trunk forty feet or more in length. Both the Sweet and Sour Gums grow very large in that region. Mr. Richard Leaming is a ship-builder, and has had much experience with different kinds of timber. He says that Cape May County oak and gum timber is more durable than any other with which he is acquainted, except some kinds of wood from certain parts of Virginia.

The Oaks of May's Landing.—May's Landing, in Atlantic County, is remarkable among the towns of the state, and, indeed, among the towns of the whole country, for having been built—a large part of it, at least—in a very heavy Oak forest, without destroying the trees. Many of the house-lots or door-yards have never been cleared up. The great umbrageous White Oak trees stand close up to the very door-steps of the dwellings. The court-house and the churches are in the same way embosomed and embowered in a forest of wonderful beauty and interest. This characteristic of the town is so prominent and vital, that a visitor is soon led to inquire regarding its origin and the means of its perpetuation. The proprietors of the great Colwell forest domain, who formerly owned the land on which the town is built, and who still own much of it, have from the earliest times set the example of preserving and protecting the trees, and when selling lots in the town they have always impressed upon purchasers their desire that this policy should be permanently followed. The streets at some points have been moved to new lines, and turned this way and that, to avoid injury to the trees, and great Oaks three or four feet in diameter stand unharmed in the middle of the sidewalks, while generation after generation of the people of the old town walk reverently around them from youth to old age, till they lie down to sleep at last under the benediction of sheltering boughs and leaf-curtained canopies in the village cemetery.

Peculiar Holly Trees.—From May's Landing the track of

an abandoned railroad leads the explorer into the heart of the woods. Young Pines are growing up between the rust-eaten rails, and the forest is again taking possession of the right of way. A mile or two from the town, at the edge of an old field, also abandoned, are some very remarkable and peculiar Holly trees. The trunks are densely "feathered" quite down to the ground, and the whole top of each tree is a solid mass of branches and foliage, wonderfully symmetrical in form, and nowhere penetrable by either eye or hand. I can hardly remember any trees so pictorial as these, except some Live Oaks in Louisiana, which will haunt me as long as I live. All about this region, as in many other places in the southern part of the state, the Mistletoe is an object of interest to visitors from lands where it does not grow, and some of it is gathered and sold for Christmas decorations. The fruit of the Persimmon should also be added to the list of forest-products which have a commercial value. It is always on sale in Philadelphia in its season, and perhaps in other cities.

Franklin Falls, N. H. *J. B. Harrison.*

Correspondence.

Fruits for Cold Climates.

To the Editor of Garden and Forest:

Sir.—Under this title the position is taken by a correspondent in your issue of January 23d, that the Russian fruits have no prospective value in the Prairie States.

Such general statements are difficult to deal with in the narrow limits of a half column, but something should be said on the other side. Perhaps this can best be done by giving briefly the estimate of some well-known directors or officers of our Iowa Horticultural Societies, who have had much personal experience with the Russian fruits.

In the northern district of the state, containing forty-two counties of rolling prairie dotted with cities, villages and fine homes, only four varieties of the apple are now recommended for general cultivation, viz., Duchess, Whitney, Letofsky and Wealthy, and of this brief list Wealthy can only be grown profitably in the most favored portions. In this trying district, at the recent meeting of the Northern Iowa Society, Mr. J. B. Mitchell, of Howard County, exhibited the wood of about thirty varieties of the Russian Apples, as clean and white as that of Box Elder, while the best specimen of the wood of the Duchess he could find was colored. He also made an exhibit of Russian winter Apples, of good size and quality.

At the same meeting, Hon. R. P. Speer, Director of the Iowa Agricultural Experimental Station, stated, and has since published in Bulletin No. 3, that, "all of our American Apples, as well as the Apples from west Europe, have proved much too tender on ordinary prairie soils." After giving his experience on his home farm at Cedar Falls, Iowa, with Russian varieties from the Department in 1874, varieties from Mr. Tuttle in 1881, and varieties from the College in 1882, he says: "The winter of 1884–'85 was the coldest since 1855–'56. In April I found that nearly all the varieties from central Russia were hardy, while many kinds from western Russia proved tender. I also found the severe winter and unfavorable spring had killed more than 40,000 of my three-year-old trees of such varieties as Walbridge, Plumb's Cider, Fameuse, St. Lawrence, Wolf River, etc. My bearing orchard of 1,500 trees I also found contained no sound trees except of Whitney, Wealthy, and varieties which had come from Russia."

Then follows a list of Russian varieties "which have never shown any signs of blight, and which, on my grounds, seem to be as hardy as Duchess." This list contains fifty-eight varieties. Then follows a list of seven equally hardy sorts, which have shown traces of blight in a few cases where near blighting sorts. Still following are lists of sorts liable to blight, or not hardy on his own grounds, containing forty-three varieties of coast Russians or north Silesians.

Again, W. C. Haviland, of Fort Dodge, Iowa, has tried in orchard and nursery 120 varieties of Russian and north Silesian Apples, and at the recent State Horticultural meeting he exhibited the wood of sixty varieties as clean and white as that of Duchess, and in many cases much better.

Still again, John C. Ferris, of Franklin County, in north Iowa, has had for a number of years many varieties in orchard and nursery, and finds fully half of them as free from blight and as hardy as Duchess.

In addition we have over 200 experimenters in north Iowa with the central Russian fruits, who report a still larger per cent. of perfect varieties.

In the central and south districts of Iowa the need of hardier sorts is not so apparent on the loess and timber-ridge soils, but the great prairie sections east of the Missouri divide must have varieties as hardy as Duchess if they prove long-lived and regularly productive.

But the final selections from the east European varieties will here be made from those imported from interior south Russia. Some of these, already fruited in south Iowa, have proved fine winter Apples, and the reports from trial-stations show the trees to be hardy up to the forty-third parallel. As an instance, Varonesh Rosy has proved as large, handsome and good as Rome Beauty has in the south district, and the fruit is found to keep as well as Grimes' Golden, yet its wood is as bright as that of Duchess when grown up to the forty-third parallel.

But your correspondent says that not one of the Russian Apples has been recommended for general cultivation by our Horticultural Societies of Iowa. Manifestly it would be hasty to attempt a selection as yet. Not a friend of the Russians in the West has urged it. It is yet promising experimental work, to be undertaken from the Atlantic to the Pacific, and in the Southern States.

As to unfruitfulness and low quality of Russian Apples, I can say that the fault of many varieties is to overbear when young. It is yet too early to decide that the sorts later in coming into bearing will not prove most valuable.

As to quality, we will grade them as Regel, Schrœder, Fischer and other Russo-German pomologists have done. Those listed in Russia for dessert use are proving good in quality here, and those listed for cooking are prime for this use alone. This holds good for the 100 varieties fruited in Iowa the past year, so far as the Russian estimate is known.

As to the Russian Pears, Cherries and Plums, the story of experience is told in recent Bulletins of the Iowa Experiment Station as to their prospective usefulness.

Ames, Iowa. *J. L. Budd.*

The Kentucky Coffee Tree for Street-planting.

To the Editor of Garden and Forest:

In your issue for February 13th you say that the Kentucky Coffee-tree "is an excellent tree for street-planting, possessing the merit for this purpose of not putting forth its leaves until late in the spring." Will you kindly explain why you think this characteristic a merit? It seems to me that trees that must often be the sole harbingers of returning summer which the dwellers in cities can enjoy should be of those species which put forth their leaves as early as possible. In the country, where a thousand minor forms of vegetation early delight the eye, the leafing time of the trees may be less regarded; but I, for one, rejoice most in those city trees which earliest cover themselves with green, and regard, for instance, the Willows in Madison Square with a peculiar degree of affection. A tree which puts forth its leaves very late hardly has a chance to play its part acceptably before the sun and dust of July destroy its freshness of aspect. In the unpaved streets of a village it may be desirable that the ground shall dry before the trees cast a dense shade. But does this argument apply in the paved street of a larger town? *J. B. K.*

New York City.

[Perhaps not. One hardly associates street-planting with bricks and mortar, trees are so rarely planted in the thickly-settled parts of American cities; and in more rural regions, trees which come into leaf early keep the roads and walks under them wet and muddy late in the season. The heat of the sun, too, is not unpleasant when it first begins to make itself really felt, and there are people who object to being deprived of it by the early leaves of many kinds of trees.—Ed.]

Winter Care of Conifers.

To the Editor of Garden and Forest:

Sir.—It would seem fitting that a word of caution should come from Garden and Forest at this point in the season, following an open winter, as to the care of Coniferæ and plants with the evergreen habit. I am reminded of this by recalling a season not many years ago, when at this period, there being no snow upon the ground, there prevailed for several days an exceptionally low temperature. A severe unchecked frost followed, penetrating the ground four or five feet, and occasioning widespread disaster to plants, such as enter into the composition of many plantations in this neighborhood—choice varieties, not always easy to get or to raise successfully. It is very possible to have a recurrence of just such conditions for the first two weeks in March. The snow which comes to-day

is usually gone to-morrow, owing to the sun's position at this time of the year and to the influence of the sea air in this vicinity. The safeguard is simple enough: to cover valuable plants with any material likely to arrest frost—manure, straw, earth, evergreen cuttings, etc.

New York. *Jno. Y. Culyer.*

The American Pomological Society.—I.

Orange-Growing in Florida.

THE twenty-second biennial meeting of this Society, held a fortnight ago at Ocala, in the heart of the orange-producing section of Florida, and during the height of the orange season was naturally devoted largely to semi-tropical and tropical fruits. We present herewith extracts from a paper by Hon. G. E. Fairbanks, on the "Orange industry from a commercial standpoint," and in future numbers we hope to give the substance of several other papers read at the meeting and prepared, like this one, by members of the Florida Horticultural Society. Some of the more important features of the meeting will also be described.

It is hardly fifteen years since orange-growing gained any prominence in Florida, but this industry has already become the leading and by far the most important commercial industry of the state. Where but a few hundred small groves existed twenty years since there are now over ten thousand. Cotton, corn, sugar, rice, grazing, all require large areas. Orange-growing is the most compact and productive of all agricultural industries. An acre of land devoted to the culture of cotton will produce perhaps fifty dollars worth of cotton or twenty dollars worth of wheat, corn, or other grains. A well-established, mature orange grove can be relied upon to produce an orange crop worth $300 to the acre, even at the low price of one dollar per box. One railway car will carry the product of twenty-five acres of cotton, but can only carry the product of a single acre of Oranges. A grove whose product is 10,000 boxes of Oranges will furnish freight for a train of thirty-three loaded cars, while a large cotton plantation producing 250 bales will furnish freight for only three or four cars. This illustrates the commercial advantage of orange-growing in building and sustaining railways. If we estimate the crop of Florida at present at 3,000,000 boxes, it requires 10,000 carloads of 300 boxes to the car to move the crop, and calculating the average freight to all parts of the country at sixty- six cents per box the crop pays the railways $2,000,000 on freight alone. The value of the box stuff used would be $390,000; the nails $30,000; the paper for wraps $12,000; labor in gathering and packing $600,000. Thus making an output of $1,140,000 for simply preparing the fruit for market. If to this large sum we add the cost of cultivation, of fertilizers, of packing houses, teams, tram roads, and the tools and implements of labor, we can begin to realize the commercial value of this industry, even at this comparatively early stage of growth. When we realize that not more than one fiftieth of the Orange trees in Florida are bearing we are amazed at the possible and probable future development of an industry limited to this single state, and small areas in Louisiana and California.

In view of the vast area of groves still to come into bearing, and the natural increase of those now productive, the question naturally arises, What will be the future of the orange industry of Florida? Some, in a general way, say that we cannot overstock the market; but within ten years we may anticipate that the increased production of Florida and California will be very large, and if all the trees now planted in the United States were to come into bearing, there is no question but that the supply would exceed the demand. In facing this fact, our advantages and disadvantages for the culture of Citrus fruits may be briefly stated.

Our climate is adapted to the production of oranges in their greatest perfection, being neither too cold nor too warm, too dry nor too wet. Again, our orange-growing section lies within a thousand miles of the principal markets of the United States, and consequently transportation should be both rapid and cheap. On the other hand, our fruit matures or comes into market in the months of November and December, January and February, a period when naturally the demand is not so great as in the summer months, and when the transportation is at more risk on account of freezing weather. Again, we have the disadvantage of competition with inferior West India and Mediterranean fruit; and, in the third place, we have an inferior service by rail and steamers, with higher rates of transportation than for foreign fruit. And even for this brief period of our shipping season there is always the risk of injury to the fruit by cold in December and January if it is allowed to remain on the trees. Labor, box stuff and commissions, are comparatively high, so that even at present prices of fruit more than half the money received in market is absorbed in expenses of placing and selling it.

It may be admitted at the outset, therefore, that lower prices are to be looked for. Nevertheless, orange-growing will never fail to yield a fair profit in Florida.

The increase of productive groves will not equal more than twenty-five per cent. of those set out, because a large percentage of groves have been planted in unsuitable localities, and will have to be abandoned. As the groves grow older there will be alternation of bearing and fruitless years, which will reduce the output one-half. The expense of caring for and working groves will be greatly reduced. The cost of preparing fruit for market will be lessened. Transportation will be made better and less expensive. System and co-operation will be introduced in the methods of marketing, so that a fairer average market price will be obtained. As the cost decreases the consumption of our fruit will increase. Even if eventually the net return to the shipper should be only fifty cents per box, allowing for a production of 250 boxes to the acre, the return would give a handsome per cent. upon the outlay.

To bring orange-growing to the best conditions of success fruit of the best varieties and of the greatest excellence as to quality must be produced. We cannot afford to send to market inferior fruit. All inferior groves, either in location or quality of soil, had best be abandoned, and only first-class groves maintained. The problem how to preserve our fruit and extend the period of supply safely over a longer period is yet to be solved. And meanwhile the highest success in orange-growing must be sought in the reduction of expenses and in improving the quality of our fruit.

Notes.

The United States government brought suit last year against the Sierra Lumber Company to recover damages of $2,217,-254.20 for cutting timber on public land in Tehama County, California. The trial has at last been decided, and the jury returned a verdict in favor of the government. The damages, however, were assessed at $41,000 only.

The New York Central and Hudson River Railroad Company is to build at once four country stations from plans by Shipley, Rostan & Coolidge, the pupils and successors of H. H. Richardson. The stations will be of stone and of the general character and design of the rural stations built by Richardson and his pupils during the last ten years along the line of the Boston and Albany Railroad.

The *Ruellia macrantha* is getting quite common in Philadelphia as a window-plant. Certainly one more worthy it would be hard to find. Its large, trumpet-shaped, rosy flowers are produced for a month or two in succession. Another favorite window-plant is the old *Linum trigynum*, a member of the Flax family. Its yellow flowers, one to two inches in diameter, are well supported by its deep green leaves.

"Lime," states the *Garden* (London), "is said to be a good preserver of timber. Ships and barges used for the transport of lime last longer than others. . . . A platform of pine planks was used to mix lime on during three generations; then, being no longer required, was neglected, and at length hidden by grass that grew over it. Sixty years afterwards, on clearing the ground, it was discovered sound and well-preserved."

A farmer in Lockport, New York, was recently indicted by the grand jury for "neglecting to remove and destroy diseased Peach trees." The case will be an interesting one to horticulturists, as it will be the first one of the kind tried in this state, and will therefore test the validity of the law with regard to diseased fruit-trees. The trees in question were examined by a Commissioner appointed by the law and found to be affected with the yellows.

"There is no such thing," says the *Garden* (London), "as a blue Primula, although one might, from the descriptions in catalogues, suppose that the hybridist's highest hopes had been realized. What the florist, or whoever he may be, calls blue, and what is strictly that color, are two different things. The flowers that are called blue are invariably of a mauve shade, sometimes pale lilac, never self blue. That we are approaching closely to the long-wished-for shade we cannot doubt, and the hybridist, if he perseveres, will doubtless attain his object; but to call those Primulas blue that go under that name is misleading. When we do have a blue Primula we shall have a prize indeed, such as will justify high praise and commendation."

The Pennsylvania Horticultural Society has fixed the dates of its exhibitions for the current year. An exhibition of bulbous and other spring plants will be held on the 2d, 3d and 4th of April when prizes of $100, $75 and $50 will be offered for the best collections of Orchids in bloom; and from the 11th to the 16th of November a Chrysanthemum show will be held, when prizes of $100, $85, $65 and $50 will be awarded for the best collections of twelve plants in twelve varieties.

The seeds of *Araucaria imbricata* are eaten in Chili as an after-dinner dainty, and with this custom is connected the origin of the oldest specimen of the tree in Europe. Towards the end of the last century, Menzies, the surgeon on Vancouver's ship, while dining with the Governor of Chili, preserved some of the Araucaria seeds which were offered him, and sowed them in pots on the voyage home. Five of them germinated, and one of them still stands near the green-houses at Kew.

In the collection of products from Lee County, Florida, now on exhibition in the Semi-tropical Exposition at Ocala are some remarkable Bamboos, grown near Fort Myers, which are large enough for fence-rails. This giant Grass survived the freeze of 1886, and it is probable that the cultivation of the Bamboo will be as profitable there as it has proved in southern California. As far north in Florida as Jacksonville a slender species, which reaches a height of twenty-five feet, survives the winter and is very useful as a decorative plant. No doubt it would serve more utilitarian purposes, and it has been suggested by Mr. A. H. Curtiss that if cut into proper lengths and woven together with two courses of wire, it would make a cheap, light and durable fence.

An excellent illustration of fruiting branches of the small Japanese Orange, known in this country as the Satsuma, from photographs taken in Japan, is published in a recent issue of the *Pacific Rural Press*. Of this plant Professor Georgeson recently wrote to *Orchard and Garden*: "The Japanese oranges are as different from our idea of an orange as they can well be, separating from the peel almost as easily as a grape, dividing into sections at the slightest pull, each section like a separate fruit, dissolving its piece into your mouth with a flavor of cherries, leaving no pulp behind, very good, excellently good they are. They, the latest of her fruits, add the crown of excellency to the already overflowing cornucopia of this 'Beautiful Land of the Sunrise.'" The Satsuma is now grown quite largely in Florida, where it is considered the hardiest of oranges, and during the last two or three years many thousands have been planted in California.

The Common Council of Philadelphia has authorized, without a dissenting vote, the Mayor of that city to negotiate for the purchase of Bartram's Garden to serve as a public park—the simplest method, on the whole, of putting into practical execution the scheme lately advocated in GARDEN AND FOREST. The plan, however, should be extended so that some stable corporation, like the Academy of Natural Sciences or the University of Pennsylvania, may have control of the management of the new park. The fact that the people of Philadelphia are securing a series of small parks is largely due to the public-spirited and tireless efforts of Mr. Thomas Meehan, the well-known horticulturist, who has been a member of the city government for several years, and who has recently been re-elected by a sweeping majority. Many generations of Philadelphians will have good reason to remember with gratitude his disinterested efforts for the improvement and happiness of his fellow men.

The *Gardeners' Chronicle* condenses from one of our consular reports an account of the isolated British settlement on Norfolk Island, in the south-western Pacific, about midway between the north cape of New Zealand and New Caledonia, and about 380 miles from each. The island is about five miles long by three broad, with a total area of 8,600 acres. It is just outside the tropics, the extremes of temperature are never reached, the climate is most equable, and the thermometer never ranges higher than 84° in the summer and never lower than 46° in winter. At one time the island was densely wooded with the native Pine *(Araucaria excelsa)* and other trees, but now it is covered with open, park-like downs, interspersed with this Pine. Originally used as a penal settlement, it was in 1856 made over to the descendants of the famous mutineers of the Bounty, who had increased and multiplied beyond the sustaining power of Pitcairn Island, and who were presented with Norfolk Island. The soil is exceedingly fertile, being composed of a dark chocolate loam, or decomposed basalt. There is a complete absence of frost, and almost every temperate and sub-tropical plant grows in luxuriance. But three plants, or weeds, are so destructive to all other vegetation that a portion of every year is given by the whole community to their destruction; but in spite of this they are increasing. These are two Solanums and the *Cassia lævigata*. The whole island is parceled out into fifty-acre lots, held at a peppercorn rent; the original immigrants received fifty acres each, and for some years each married couple received the same grant; this was reduced to twenty-five acres. The native vegetation of the island is wholly peculiar. Besides the famous Norfolk Island Pine already mentioned, there is a Tree Fern *(Alsophila excelsa)* and a Palm *(Areca Baueri)*; there are besides upwards of thirty different kinds of Ferns.

A correspondent writing to the New York *Tribune* from Ithaca, New York, gives the following recipe as the best for poisoning English sparrows: "Dissolve arseniate of soda in warm water at the rate of an ounce to a pint; pour this upon as much wheat as it will cover (in a vessel which can be closed so as to prevent evaporation), and allow it to soak for at least twenty-four hours. Dry the wheat so prepared, and it is ready for use." It should be distributed in winter in places where the sparrows congregate, but where domestic fowls will not be endangered, and a quick decrease in their numbers is certain to follow. This is a somewhat exacter form of the advice given by the United States Agricultural Department in its Commissioner's report for 1887; and to explain the necessity why it should be widely employed, the writer calculates the rapidity with which English sparrows multiply where they already exist, and spread further and further westward—covering the surface of the United States and Canada, he says, at the rate of 500,000 square miles yearly; and adds many instances of their powers of depredation. In cities, we all know, they do considerable damage, but how much is exemplified by the fact that "the sexton of St. John's Church, in Providence, Rhode Island, took 970 eggs and two cart-loads of nests at one time from the Ivy upon the church," and that "the luxuriant Ivy formerly covering portions of the Smithsonian building at Washington was thus totally destroyed." Every farmer, at least in the neighborhood of our eastern towns, is aware what enormous injury sparrows inflict upon ripening crops; and it seems indeed as though concerted action should be taken to prevent their becoming an intolerable pest throughout the whole country.

The great public parks in German cities are undoubtedly the most artistic, in scheme and execution, which have been laid out in recent years. It is a double surprise, therefore, to find, from time to time, in German horticultural journals, signs of bad taste exhibiting themselves in directions which have no parallel, we believe, in other countries. For example, one of the chief horticultural journals of Germany has recently devoted many pages to the praise of artificially constructed ruins, and has given illustrations to show how they may best be constructed. Of course, ruins which are essentially picturesque objects, and speak as strongly to sentiment as to the eye, are peculiarly beloved in the sentimental Fatherland; and artificial ruins are found there at almost every step—in the parks of wealthy land-owners, in the gardens of poets, on top of pretty hills that are laid out as public promenades, and in the depths of rocky ravines. Now they serve as studies or garden shelters, now as booths for the sale of refreshments, and again as outlooks affording a picturesque prospect. And, it must be confessed, they are usually placed in exactly those spots where, if they were only genuine, they would have the best possible effect. But the fact that they are not genuine so degrades them in the eye of sensible folk that they excite laughter or contempt rather than the poetic sentiment they are intended to serve. Most travelers believe, we fancy, that these artificial ruins are creations of the earlier years of our century, when sentimentalism ran riot in Germany, and expressed itself in a thousand other ludicrous ways. But it seems, from the evidence of the articles to which we refer, that the taste for them is not yet extinct; and it is either amusing or distressing, according to one's turn of mind, to read a serious discussion with regard to the best ways of placing them, of utilizing them for one practical purpose or another, and, especially, of making them "genuine." Truth, we are told, should be always be considered in their formation—they should be well built, of dignified materials, and a strict regard should be paid to the dictates of style as revealed in the genuine ancient constructions. And all this effort after truth is to be expended in undertakings, the object of which is to embody a lie! It is almost needless to say that whatever may be the effort after truth in the matters of detail, it is the lie which makes itself most clearly felt in the result.